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ABSTRACT

This report distills hundreds of indicators from both domestic and international sources to determine how the United States compares to other countries and to its own past performance in competitiveness. It attempts to establish a baseline of some key education and training indicators that, taken together, show where the nation stands and where it is going. The report looks at trends in the United States and compares them to those in other countries. In doing so, it emphasizes a lifecycle approach to human resource issues, divided into four stages: (1) family and early childhood; (2) primary and secondary school education; (3) university education; and (4) training. Highlights are as follows: the U.S. teen pregnancy rates are rising; the nation ranks at the bottom of the industrialized world in many critical infant health indicators, including infant mortality and low birthweight babies; child poverty is three times higher than in other western countries; U.S. students rank low in science and math; costs of a college degree have risen dramatically; a smaller proportion of U.S. students pursue science and engineering; and U.S. high school graduates receive a fraction of the training their counterparts receive in Germany, France, and Japan, and older workers in Japan receive 3-5 times as much training as U.S. workers. These encouraging signs are noted: the nation's high school dropout rate is declining; U.S. students are strong in reading; the U.S. population received the most schooling; and U.S. universities continue to attract foreign students. (YLB)

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COMPETITIVENESS PROFILE

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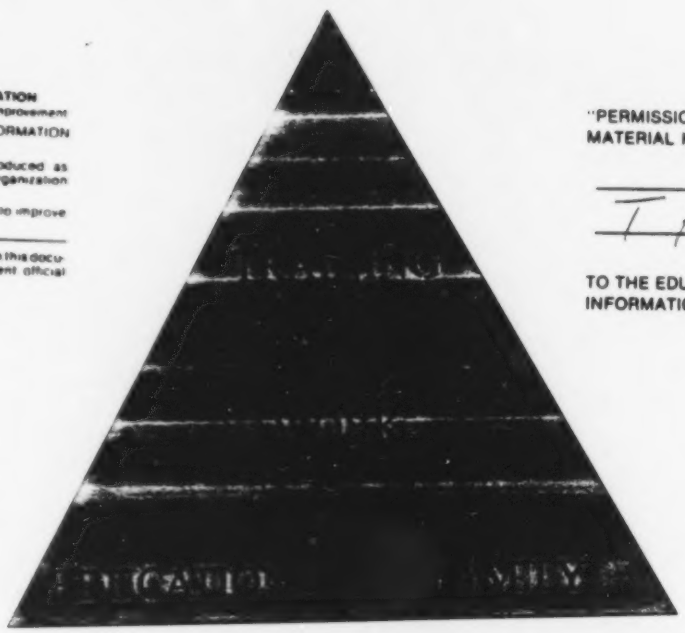

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PREFACE

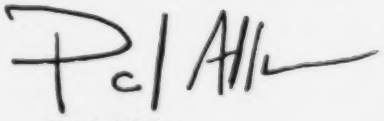
In the survey of private sector leaders that accompanied the Council's 1994 Competitiveness Index, America's weakness in K-12 education was cited as the top competitiveness issue confronting the nation, followed by our low national savings rate and our poor record in training. Because education and training ranked so high on the list of national priorities, the Council decided to investigate these issues further. This report, Human Resources Competitiveness Profile, documents the extent of the challenge we face.

Despite the impassioned national debate about education and training, we are still impoverished when it comes to good information. All too often we rely on piecemeal statistics and anecdotes. It is notoriously difficult to compare schools and training programs in different parts of the country, much less in different sectors of the economy or in different areas of the world.

Over the past six months, the Council has examined hundreds of indicators from both domestic and international sources in order to determine how the United States compares to other industrial countries and to its own past performance. The distillation provided in the following pages is not meant to provide an exhaustive analysis or to offer policy recommendations, but to establish a baseline of some key education and training indicators that, taken together, show where America stands and where we are going.

This report looks at trends in the United States and compares them to those in other countries. In doing so, it emphasizes a lifecycle approach to human resource issues, divided into four stages: 1) family and early childhood, 2) primary and secondary school education, 3) university education and 4) training. By looking at our performance in these four areas, we glimpse the strengths and weaknesses that link our overall education and training system. In doing so, we hope to help set the stage for a more constructive national policy debate that focuses on the need for lifelong learning.

The challenge is clear — America must have world-class education and training programs if we are to compete successfully in the 21st century. The Council looks forward to following up this report with a more in-depth look at specific problems in order to help meet that challenge.



Paul Allaire
Council Chairman
Chairman and CEO
Xerox Corporation

HIGHLIGHTS

DISTURBING NEWS

- **U.S. teen pregnancy rates are rising.**

The teen pregnancy rate in the United States has risen steadily since the mid-1980s. The proportion of unmarried teen mothers has also increased.

- **The U.S. infant health record is poor.**

The United States ranks at the bottom of the industrialized world in many critical infant health indicators, including infant mortality and low birthweight babies.

- **U.S. child poverty is three times higher than in other western countries.**

The child poverty rate in the United States rose to 21.9 percent in 1992.

- **U.S. students rank low in science and math.**

Compared to other large countries, U.S. students rank last in science and math, and they have shown little improvement in science and math over the past twenty years.

- **The costs of a college degree have risen dramatically.**

Since the early 1980s, costs for a higher education in the United States have risen 32 percent at public universities and 55 percent at private schools.

- **A smaller proportion of U.S. students pursue science and engineering.**

Only 15.3 percent of all U.S. undergraduate degrees are in science and engineering, compared to more than 20 percent in most European nations.

- **U.S. workers receive less training.**

U.S. high school graduates receive a fraction of the training their counterparts receive in Germany, France and Japan, and older workers in Japan receive 3-5 times as much training as U.S. workers.

ENCOURAGING SIGNS

- **The U.S. high school dropout rate is declining.**

In 1993, the high school dropout rate was 11 percent, down from 14.6 percent in 1972.

- **U.S. students are strong in reading.**

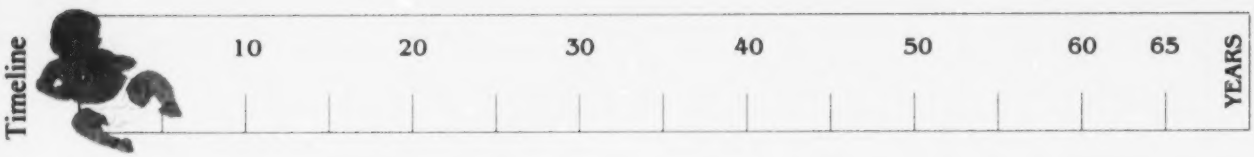
U.S. students ranked at or near the top in reading compared to students in other large countries.

- **The U.S. population receives the most schooling.**

The United States has a higher percentage of high school and university graduates than other G-7 countries.

- **U.S. universities continue to attract foreign students.**

The percent of foreign students studying science and engineering at U.S. graduate schools increased six percent between 1983-91.

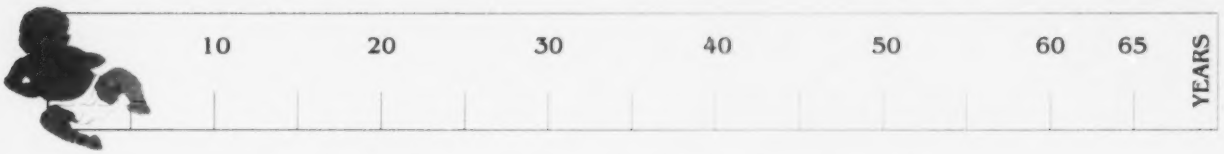


FAMILY AND EARLY CHILDHOOD INDICATORS

Long before children enter school or youths enter the workforce, the stability of their family, the economic conditions they encounter and the adequacy of their nutrition shape their chances of success. A child from a poor family without proper nutrition or healthcare is not only much more likely to fall behind or drop out of school, but also to perform poorly in the workplace. This performance imposes significant long-term costs on society as a whole.

Several indicators show just how far the United States has to go in this area:

- America has a higher percentage of low birthweight babies than all other industrial countries, except the United Kingdom, and ranks 23rd in infant mortality rates worldwide.
- U.S. teen pregnancy rates have been rising steadily since the mid-1980s.
- The United States has more single-parent households than any other industrial country.
- The U.S. child poverty rate is almost triple that of other leading industrial nations.



The U.S. infant mortality rate is one of the highest in the developed world

• The United States ranked 23rd in infant mortality in 1993, falling from 22nd in 1992. The U.S. rate is equivalent to that of Portugal, Cuba and Greece.

• In 1992, the infant mortality rate for blacks in the United States ranked 40th in the world.

• While the United States ranks below other industrialized nations, some progress has been made. The United States has cut its under-five mortality rate by two thirds since 1960.

Infant Mortality Rates, Selected Countries

(Infant deaths per 1,000 live births) - 1993

	World Rank	Mortality Rate
Finland	1	4
Japan	2	5
Germany	5	6
Canada	12	7
United Kingdom	12	7
France	12	7
Italy	12	7
United States	23	9

Source: UNICEF, 1995

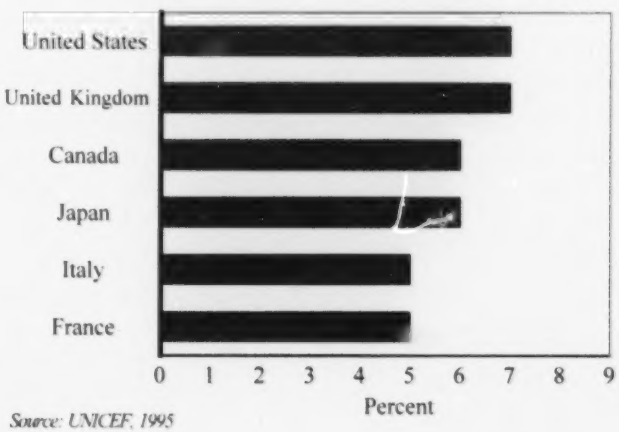
The United States has more low birthweight babies than most other industrialized countries

• For the United States, the proportion of low birthweight babies fell 12.3 percent between 1969-1991. But between 1980-1991, the number actually increased 4.4 percent.

• Blacks in the United States have a low birthweight rate of 13.6 percent, more than double the rate for whites (5.8 percent).

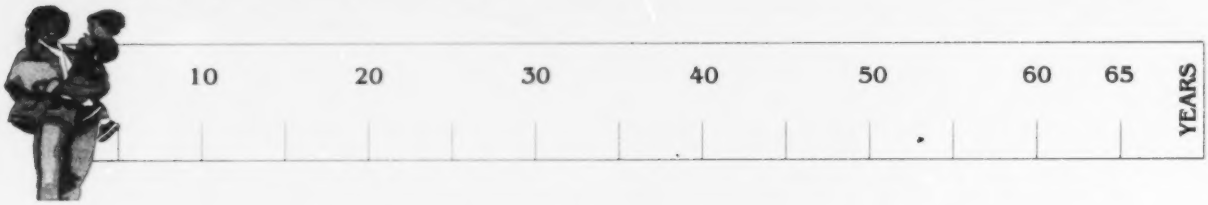
• U.S. immunization rates also remain low. Only 55.3 percent of U.S. two-year-olds were fully immunized against childhood diseases in 1992.

Percentage of Infants with Low Birth Weight: 1990



Source: UNICEF, 1995

Note: Low birthweight is defined as under 5.5 lbs.

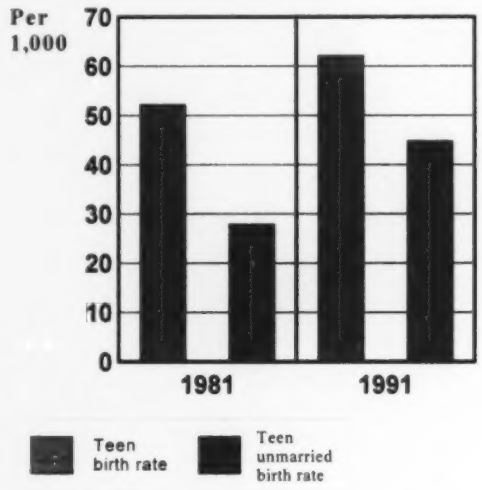


The U.S. teen pregnancy rate continues to rise

• In 1991, the teen birth rate rose for the fifth consecutive year, to 62.1 births per 1,000 girls, the highest rate since 1971. Nationally, teen births reached a high point in the 1950s (at 89.1 births per 1,000 girls) and decreased gradually until the mid-1980s.

• The number of births to unmarried teenage mothers has risen dramatically. In 1950, only 17 percent of teen births were to unmarried mothers. In 1991, two-thirds of teenage mothers were unmarried.

National trends in teen pregnancy
1981 to 1991



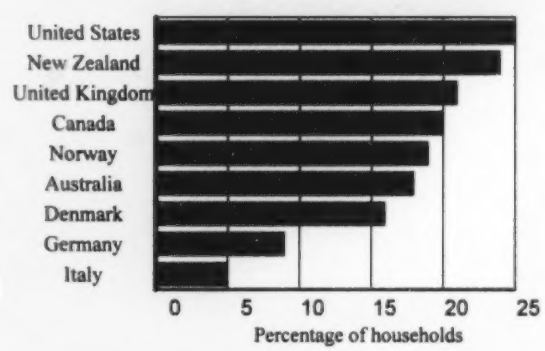
Source: Children's Defense Fund

The United States has the largest proportion of single-parent families

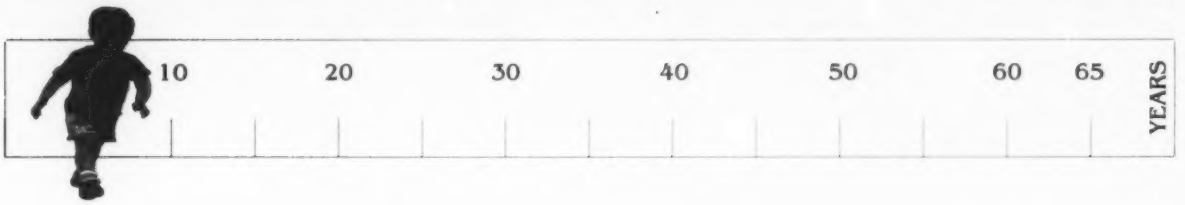
• 25 percent of U.S. households with children were headed by a single parent in 1991, more than any other industrialized country. For other countries, the percentage ranged from 24 percent in New Zealand to 5 percent in Italy.

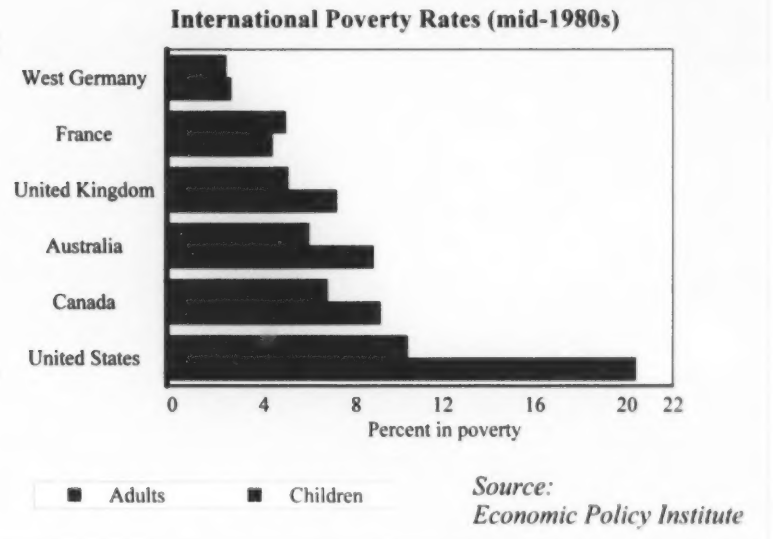
• Children in female-headed households in the United States are much more likely to live in poverty. Of the 14.8 million children in such households in 1992, 54 percent were poor.

Single parent households with children under 15 (1991)
(as a percentage of all households with children under 15)



Source: UNICEF, 1994





Source:
Economic Policy Institute

The U.S. child poverty rate is nearly three times that of other western countries

• The child poverty rate in the United States increased in 1992 to 21.9 percent, raising the number of children in poverty to 14.6 million.

• More U.S. children lived in *extreme poverty* (defined as half the official poverty level) in the United States in 1992 than in any year since the first data were collected in 1975.

• Blacks and Hispanics in the United States experience more than double the child poverty rate of whites.

• For children under six, the poverty rates are even higher. For blacks, 53.5 percent of children under six lived in poverty in 1992, compared to 13.3 percent for whites and 43.7 percent for Hispanics.

• According to a U.S. Department of Education study, every year a child lives in poverty adds two percentage points to the chances that the child will fall behind in school.

PRIMARY AND SECONDARY SCHOOL INDICATORS

Just as family life influences a child's success in school, education helps determine whether a child will become a productive member of the labor force. The ability of the U.S. educational system to prepare young people for work is therefore critical to U.S. competitiveness.

The United States has a mixed record in primary and secondary education:

- A higher percentage of young people in Japan and Germany are graduating from high school than in the United States, even though the United States has more high school graduates overall, indicating that the lead we once held has been lost.

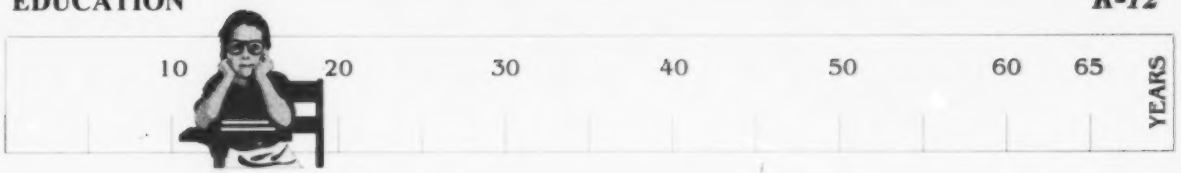
- U.S. high school dropout rates have declined slowly since the 1970s.

- U.S. students spend about half as much time on core academic subjects as students in Germany, France and Japan.

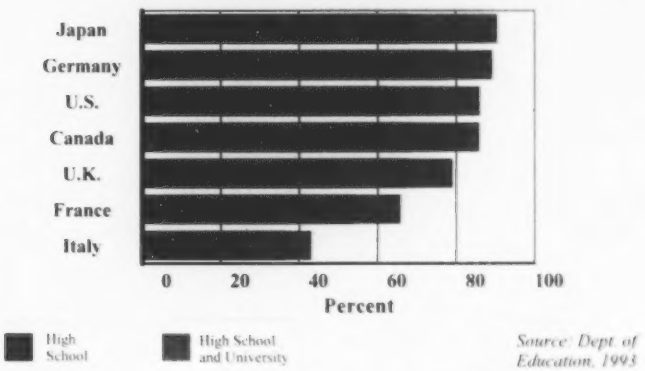
- U.S. education spending has increased fivefold since 1950, and remains one of the highest in the developed world.

- In reading, American students outperform students from other large countries. But in science and math, we continue to lag behind.

- Fewer students participate in vocational education in the United States than in Germany, Italy and France.



Percentage of population completing secondary and higher education: 25- to 34-year-olds (1991)



Source: Dept. of Education, 1993

Among young adults, Japan and Germany have a higher percentage of high school and university graduates than the United States

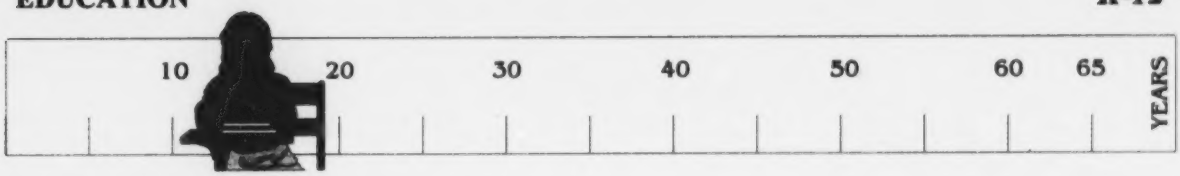
• Among the 25-34-year-old age group both Germany and Japan have a higher proportion of high school graduates than the United States. In Japan, 90.6 percent of the people in this age group had completed high school, and in Germany 89.3 percent had, compared to only 86.1 percent in the United States.

• Of the 25-64-year-old age group in the United States, however, 83.3 percent had completed high school and 23.6 percent had finished college, more than any other country. The corresponding figures for Japan were 69.7 percent and 13.3 percent, and for Germany, 81.8 percent and 11.2 percent.

High school dropout rates in the United States have been decreasing gradually

• In 1993, 11.0 percent of 16-24-year-olds in the United States were high school dropouts. The dropout rate was 27.5 percent for Hispanics, 13.6 percent for blacks and 7.9 percent for whites. Overall, dropout rates have been declining slowly since 1972, from a rate of 14.6 percent.

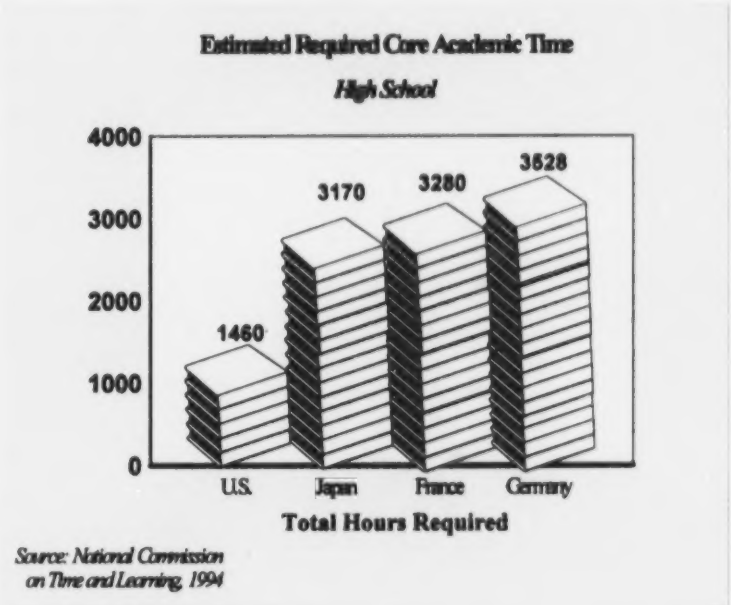
• Low-income students are much less likely to finish high school. In 1991, 30 percent of 19-20-year-olds from low-income families were high school dropouts, compared to 14 percent for middle-income families and 3 percent for high-income families.



French, German, and Japanese students receive twice as much core academic instruction as U.S. students

• Among industrialized countries, the United States ranks favorably in terms of the number of hours its students spend in class. When it comes to time spent on core academic subjects, however, the United States lags far behind.

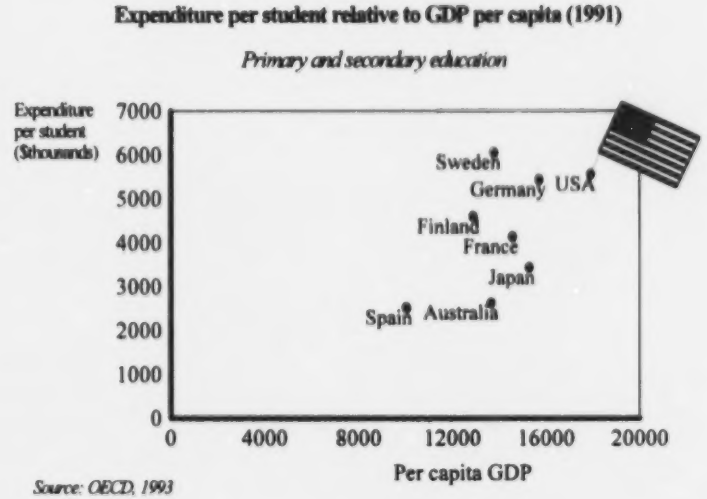
• Students in Japan and Germany also spend more time on schoolwork outside of school hours.



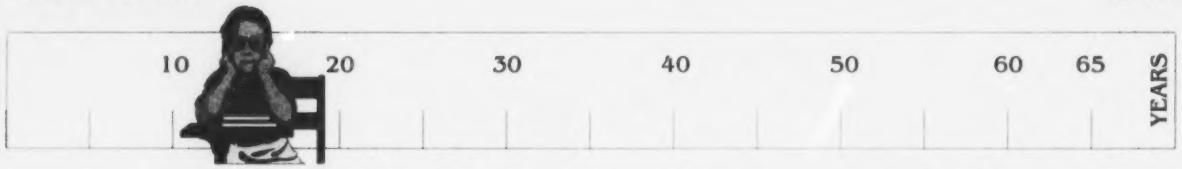
The United States spends more on primary and secondary education than most other countries

• The typical OECD country spends about $4,840 per student at the secondary level. Sweden, Germany and the United States spend more than $6,000 per secondary student, while Spain spends less than $3,000.

• In the United States, public revenues at the elementary and secondary levels have increased almost fivefold since 1950. Explanations for the rise are varied, including a rise in administrative costs, and the fact that schools have taken on increased responsibility in areas such as special student education and nutrition.



Note: In general, per student expenditures correspond more to a nation's standard of living than to its inputs.



U.S. student proficiency in math, reading and science compared to other large countries (1991)

MATH AND SCIENCE
13-year-olds

	Math	Science
Korea	↓	↓
Taiwan	↓	↓
Canada	↓	↓
Soviet Union	↓	↓
Spain	↓	↓

READING

	9 year-olds	14 year-olds
France	↑	↓
Italy	↑	↑
Spain	↑	↑
W.Germany	↑	↑
Canada	↑	↑

↓ U.S. students performed worse ↑ U.S. students performed better

Source: Department of Education, 1993: International Assessment of Educational Progress

U.S. students are more proficient in reading but weaker in science and math than students in other industrialized countries

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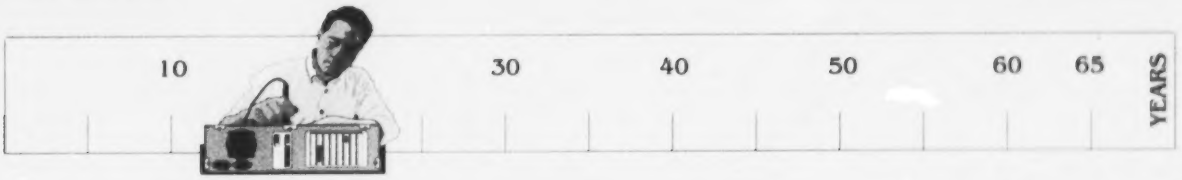
• Goals 2000, a federal initiative to improve the performance of U.S. high school students, identified improvement in math and science as one of eight key objectives for U.S. students by the year 2000. The latest National Education Goals Report showed that U.S. students have made little progress in science and math since the first international tests in 1988.

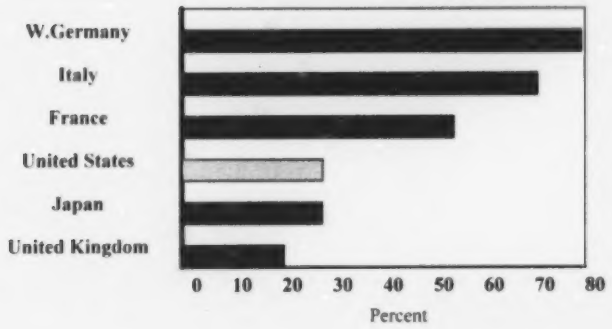
• 13-year-olds in the United States performed poorly in both science and math, and ranked last in both subjects compared to students in other large industrialized countries. In science, performance was better among 9-year-olds -- U.S. students outperformed their counterparts in Canada, the Soviet Union, and Spain. In math, 9-year-olds in the United States remained last.

• 9-year-olds in the United States ranked at the top in reading proficiency compared to other large industrialized countries. Among 14-year-olds, only French students had a higher average reading score than U.S. students.

• Domestically, results from the National Assessment of Educational Progress show that reading, math and science scores have not improved significantly since 1970. Average math scores increased slightly for 9- and 13-year-olds between 1973 and 1990, but 17-year-olds showed no improvement. In science, achievement levels did not change for 9- and 13-year-olds between 1970-90, and worsened over the same period for 17-year-olds. In reading, 9- and 13-year-olds also showed no improvement between 1971-90, but reading proficiency increased slightly among 17-year-olds.



Percent of high-school students on vocational track (1991)



Source: OECD, 1993

The United States has far fewer students in vocational education than most European G-7 nations

• Broadly, France, Germany, and Italy enroll large proportions of secondary students in vocational programs, while Canada, Japan, the United Kingdom, and the United States do not.

• International comparisons of vocational education are difficult because there is no accepted definition among countries of what constitutes vocational education and training. Even within the United States, aggregate statistics are hard to obtain. According to the Department of Education, about 97 percent of all high school graduates completed at least one course in vocational education. Estimates of the percentage of high school students on a vocational track in the United States range from 7 to 28 percent.

UNIVERSITY EDUCATION INDICATORS

In the survey of private sector leaders that accompanied the Council's 1994 Competitiveness Index, the United States was rated as "excellent" in graduate education and as "good" in undergraduate education relative to other industrialized countries.

Several indicators support these conclusions:

- The United States has the highest number of university graduates, and has one of the highest graduation rates for women.

- Increasing numbers of foreign students are coming to the United States to attend college or graduate school.

But other indicators point to problems in U.S. higher education:

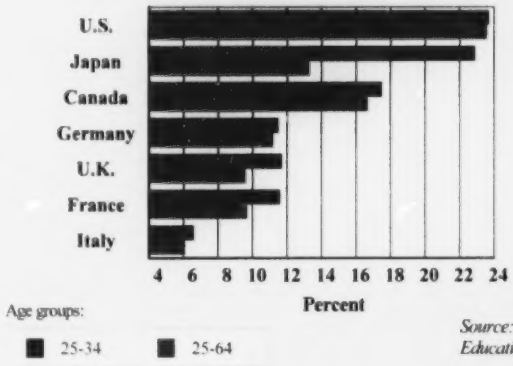
- Real costs for a college degree have risen sharply since 1980 at both public and private colleges.

- The United States has one of the lowest percentages of science and engineering degrees, and this percentage is declining.

The United States has the highest percentage of university graduates

• Of all 25-64-year-olds in the United States, 23.6 percent finished college, more than in Japan, Germany, the United Kingdom, France, Italy or Canada. But the percentage of 25-34-year-olds with university degrees is almost identical to this overall rate at 23.7 percent, suggesting that the proportion of Americans graduating from college is not increasing significantly.

Percentage of population completing higher education by age group (1991)



Source: Dept. of Education, 1993

• By contrast, in Japan, the percentage of college degrees is much higher among the younger population group (22.9 percent vs. 13.3 percent), showing that more and more Japanese youth are attending college.

• Gender differences are greatest in Japan. Young men in Japan are much more likely than young women to have university degrees (34.2 percent vs. 11.5 percent). Other than Japanese men, women in the U.S. have the highest percentage of university degrees of the G-7 countries.

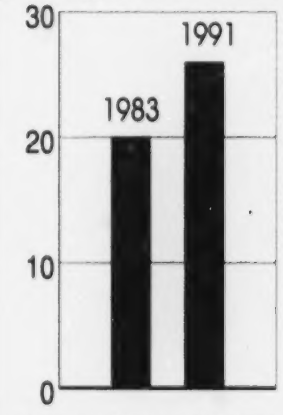
More foreign students are coming to the United States for college

• Foreign students accounted for 26 percent of all students studying science and engineering (S&E) in U.S. graduate schools in 1991, a 6 point increase from 1983. This increase represented a 65 percent jump in the number of foreign students studying S&E at U.S. graduate schools.

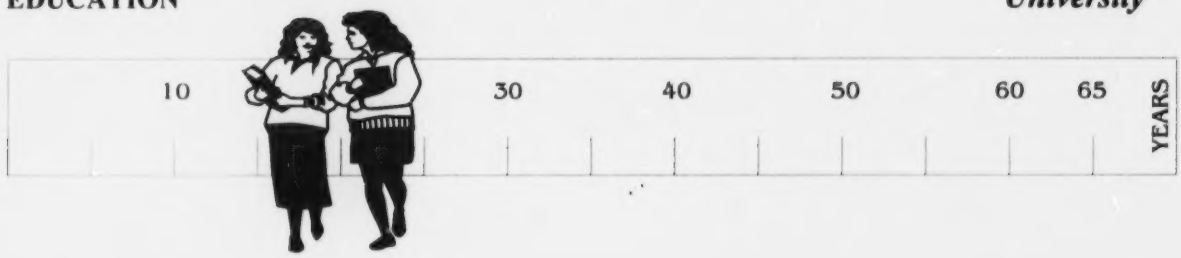
• Over 400,000 foreign students attend U.S. universities (3 percent of total enrollment). Asian students accounted for 43 percent of foreign undergraduates in 1991, and 65 percent of foreign graduate students. In fact, more Taiwanese students received doctorates in S&E in the U.S. than in Taiwan. About one-half of South Korea's doctoral degrees and one-third of China's are from U.S. universities.

• Foreign students received 17 percent of all U.S. doctoral degrees in 1983 and 30 percent in 1991. In general, about half of these students planned to stay in the United States after graduation.

Foreign students in U.S. graduate schools (as a percentage of total enrollment)

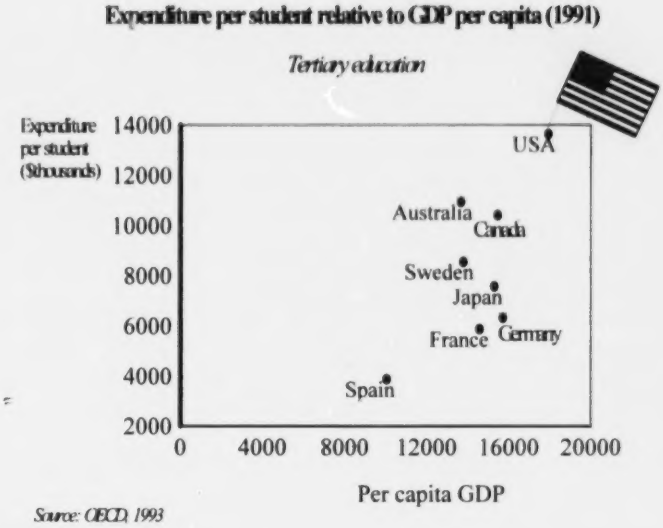


Source: National Science Foundation, 1993



The United States spends the most on higher education

• The United States had the highest expenditures per student at $13,639 in 1991. On average, OECD countries spent $7,690 per student.



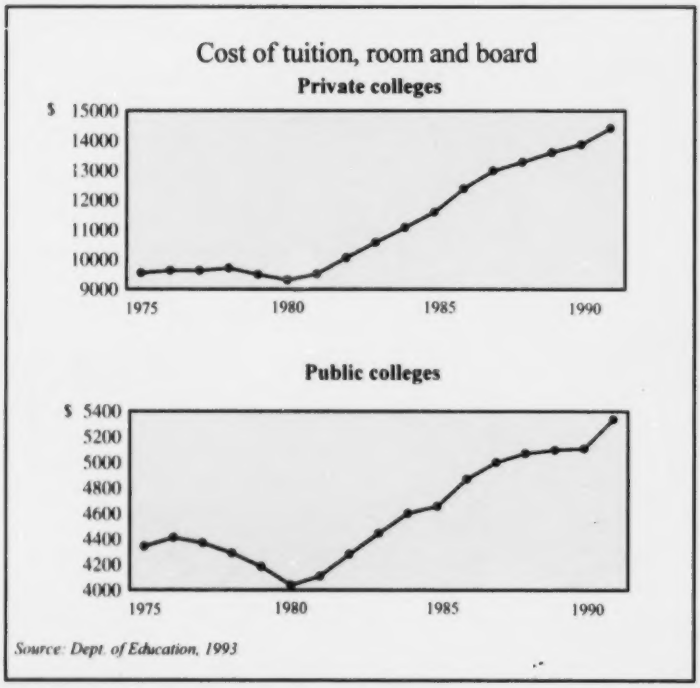
Source: OECD, 1993

In the United States, costs for a college degree are rising fast

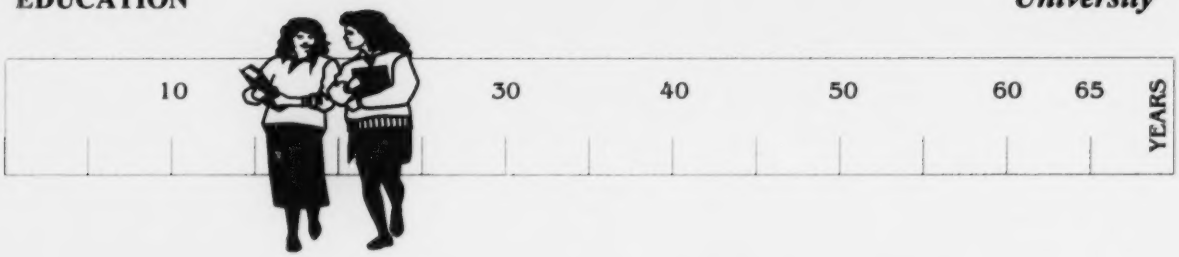
• College tuition and room and board fell after 1972 and reached a low point in the 1980-81 academic year. But since 1981 costs for a higher education have risen steadily.

• Between 1980 and 1991, tuition increased by 32 percent (in constant dollars) at public universities and 55 percent at private schools.

• In 1989-90, 44 percent of students had costs (including tuition and fees, room and board, and other expenses) which exceeded their families' ability to pay.



Source: Dept. of Education, 1993



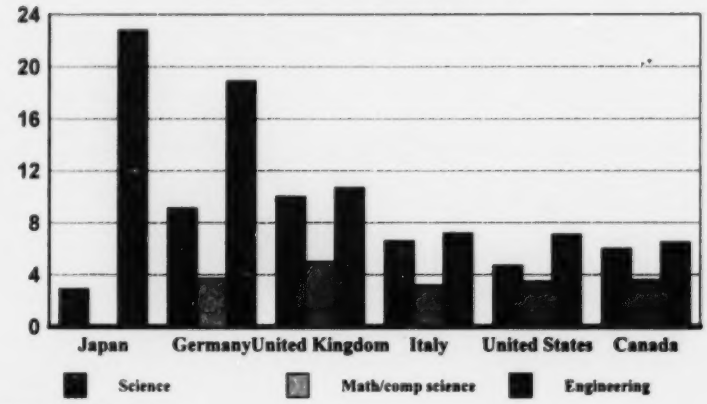
The United States graduates fewer science and engineering students as a percent of its total graduates than other G-7 countries

• In 1991, 15.3 percent of all undergraduate degrees awarded in the United States were in the fields of science, math or engineering. In most European countries and Japan, this figure was over 20 percent.

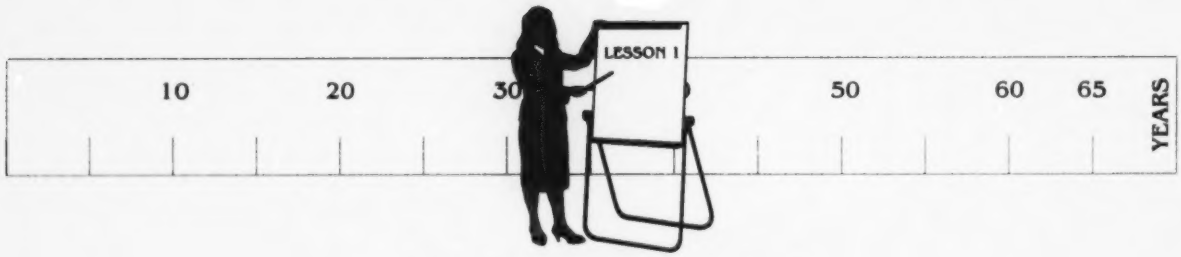
• In Japan, more than seven times as many students received engineering degrees as science degrees.

• In the United States, the percent of engineering degrees grew during the first half of the 1980s, but declined during the last half of the decade, peaking at 9.7 percent of all undergraduate degrees awarded in 1984. The percentage of math and science degrees also dropped, from 9.8 percent of all degrees awarded in 1971 to 6.5 percent in 1990. Computer science degrees increased from .3 to 2.6 percent during the same time period.

Percent of university degrees awarded in science and engineering (1991)



Source: OECD, 1993.



TRAINING INDICATORS

Given different approaches to on-the-job training, different ways of defining it and different ways of measuring it, there is no easy way to compare training across sectors, much less across countries. Yet everyone agrees that training is becoming more and more important to competitiveness. While formal education can provide people with a strong foundation, skills must be regularly upgraded.

Countries have fundamentally different approaches to training. In Japan, Germany and France, training often begins immediately upon a worker's entry into the labor force and continues throughout a worker's life. In the United States, however, companies are much less likely to train new employees and often delay investing in new skills. Some U.S. companies are also turning increasingly to informal training as an effective teaching tool.

Indicators on training show the following:

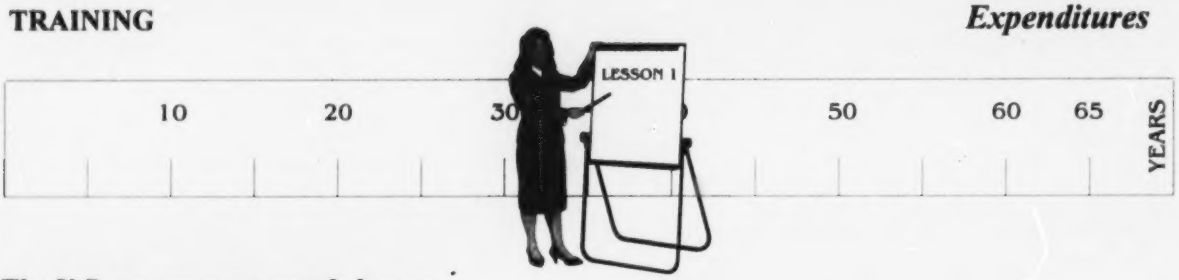
- The U.S. government spends less on job training than governments in other countries.

- In the United States, only 16 percent of workers receive corporate training, and higher skilled workers receive more training than lower skilled employees.

- Japanese workers receive 3-5 times as much training as U.S. workers.

- In the United States, training increases the longer a worker stays with a company, whereas in Japan, training levels remain relatively constant throughout a worker's tenure.

- Young people in the United States are much less likely to receive corporate training than their counterparts in Germany, France or Japan.

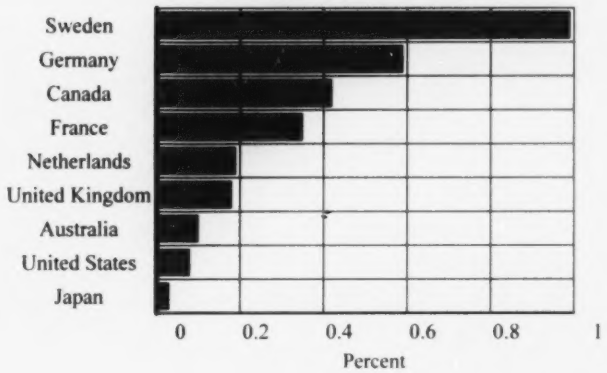


The U.S. government spends less on training and job placement than other industrialized countries

• In 1991-92, the U.S. government spent only .08 percent of GDP on job training, with an even smaller percentage (.01 percent) going towards other kinds of support, such as job creation and unemployment compensation.

Public spending on training and placement

(as percentage of GDP)

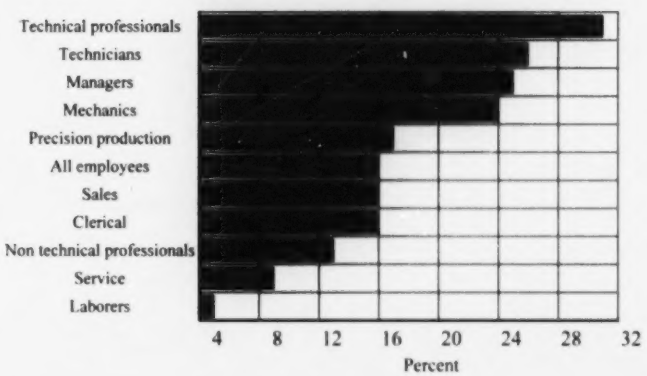


Source: OECD (1993)

In general, skilled and professional workers receive more training from companies than unskilled workers

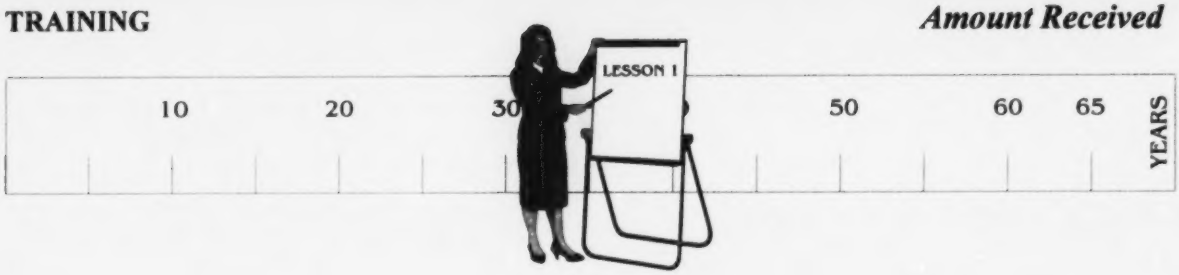
• Overall corporate training in the United States remains low, with only 16 percent of all workers receiving formal training in 1991. Training levels are higher for skilled professionals and managers than for unskilled workers, ranging from 31 percent for technical professionals to 5 percent for laborers.

Who gets the training in U.S. companies



Source: American Society for Training and Development

Amount Received

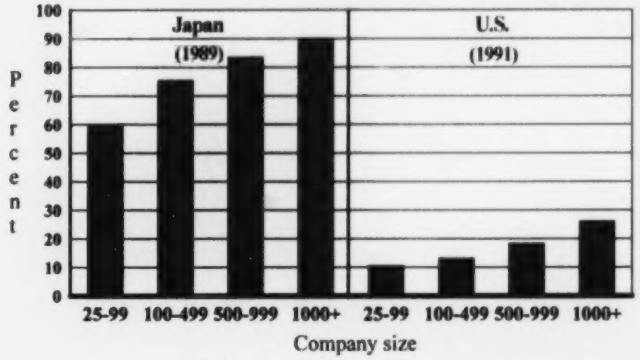


Fewer workers receive formal training in the United States than in Japan

- The percent of Japanese employees who receive training is almost 3-5 times higher than it is in the United States. In both countries, training increases with the size of the firm.

- Formal training is also related to job tenure. In Japan, average tenure ranged from 8.9 to 13.7 years (increasing with the firm size and the amount of training received), whereas tenure in the U.S. varied from 5.4 to 8.4 years.

Percent of employees who received formal training
(by company size)



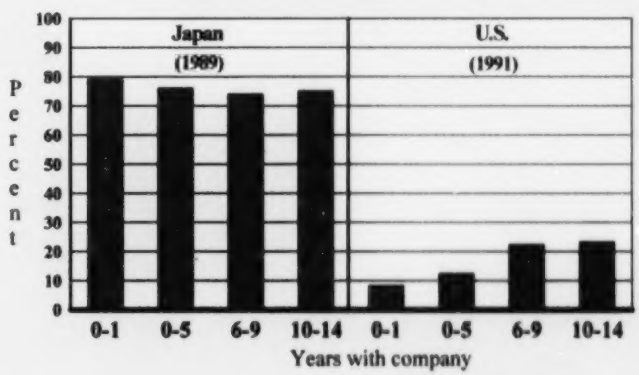
Source: OECD, 1993

Training for U.S. workers increases with years of service

- In the United States, formal training increases with the amount of time a worker remains at a firm. In Japan, however, training levels are relatively constant -- whether a worker has been at a company one year or several.

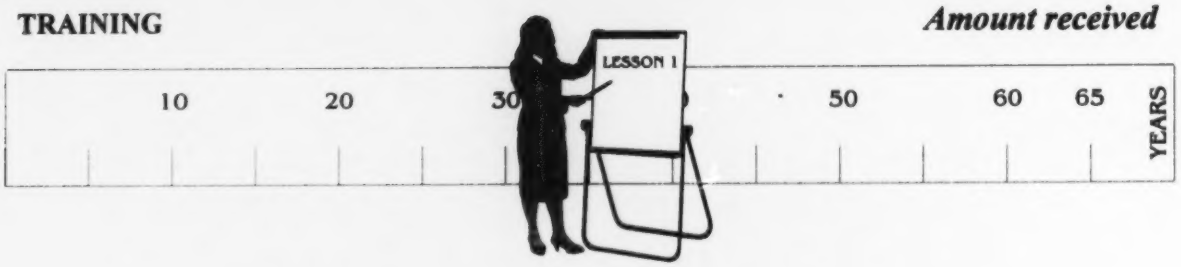
- Overall training levels are significantly higher in Japan, at all levels of tenure.

Percent of employees who received formal training
(by years with company)



Source: OECD, 1993

TRAINING *Amount received*



High school graduates receive much less training in the United States

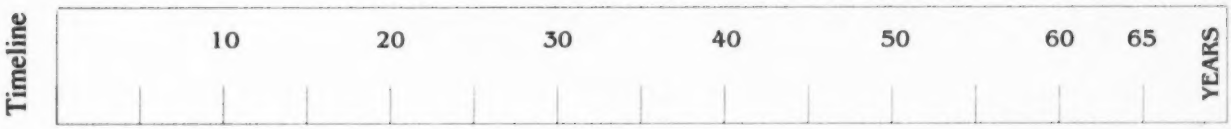
• Young people in the United States receive only a fraction of the training youths receive in Germany, France and Japan. American youths who did receive training were much more likely to stay with their employer than those who received no training.

• In the United States, most of the firm-based training young workers received took place after one year with the employer.

Share of young new recruits who received training from their employer

		Percent
France	20-29 year-olds with training between 1980-85	**71.5**
Japan	New hires from high school, 1984	**67.1**
	First year at firm, 1989	**32.3**
Germany	Dual system apprentices	**23.6**
United States	First job after leaving school (1980s)	**4.8**
	Training at any job within 7 yrs after school (1980s)	**10.2**

Source: OECD, 1993



CONCLUSION

Family life, education, and training all influence a person's entry into and performance in the labor market. Fifteen years ago, a male college graduate earned 49 percent more than a man with a high school diploma. By 1993, a male college graduate earned 83 percent more. At the same time, real wages have fallen for those at the lower end of the scale, income inequalities are now larger in the United States than at any time since the 1930s, and remain larger than in many other developed nations.

The widening gap between rich and poor and falling real wages in some sectors of the U.S. economy have increased the job insecurity of many Americans and raised questions about their long-term standard of living. A lifecycle approach to human resources shows that there is no single explanation or solution for these problems facing America's workforce. A multitude of factors influence a person's development - early childhood and family conditions, education, and training all play an important role. Poor performance in these areas has a negative impact not only on an individual's success, but also on the competitiveness of the economy as a whole.

ABOUT THE COUNCIL

Founded in 1986, the Council on Competitiveness is a nonprofit, nonpartisan organization of chief executives from business, higher education and organized labor who have joined together to pursue a single overriding goal: to improve the ability of American companies and workers to compete more effectively in world markets, while building a rising standard of living at home.

To build consensus within the public and private sectors on the actions needed to help Americans compete, the Council pursues a three-part agenda: increase public awareness of the breadth and severity of America's economic problems; mobilize the political will required to set the United States on a positive economic course; and assist in the development of specific public policies and private-sector initiatives. To that end, the Council focuses on issues in the areas of fiscal policy, science and technology, international economics and trade, and human resources.

The Council is governed by an executive committee and draws on the resources of its national affiliates — more than forty trade associations, professional societies and research organizations — to help analyze issues and develop consensus. The Council is privately supported through contributions from its members, foundations and other granting institutions.

SOURCES

The data for the Human Resources Competitiveness Profile comes from a variety of sources:

• American Society for Training and Development, "How Workers Get Their Training", 1992

• Children's Defense Fund, The State of America's Children Yearbook 1994

• Economic Policy Institute, The State of Working America 1994-95

• National Commission on Time and Learning, Prisoners of Time - 1994

• National Education Goals Report, Building a Nation of Learners - 1994

• National Science Foundation, Science and Engineering Indicators - 1993

• OECD: Education at a Glance: OECD Indicators - 1993; "Enterprise tenure, labor turnover and training", Employment Outlook, July 1993

• UNICEF: The Progress of Nations: 1994, The State of the World's Children - 1995

• U.S. Department of Education: Dropout Rates in the United States - 1993; The Condition of Education -1993

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The third in a series of policy documents, this report highlights the Council's September 7-8, 1994 NII applications conference. It lists and examines the barriers users are facing in manufacturing, education, electronic commerce, healthcare and entertainment in order to set the stage for a more constructive national policy debate. December 1994. ($25.00; $3.00 s/h).

Critical Technologies Update 1994
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Gaining New Ground: Technology Priorities for America's Future
Representing the first-ever U.S. private sector consensus on U.S. technology priorities, this report identifies the critical generic technologies driving the American economy and offers recommendations to both the public and private sectors for strengthening U.S. leadership in these areas. March 1991 ($40.00).

Shipping/handling for publications is $2.50 in the U.S.; overseas is $5.00. Pre-payment only; make check or money order (cash accepted in person only) payable to the Council on Competitiveness, 1401 H Street, NW, Suite 650, Washington, DC 20005.

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